SEQUENCE LISTING

<110> MERCK PATENT GMBH
BAKER, Matthew
CARR, Francis J.

<120> T-CELL EPITOPES IN ERYTHROPOIETIN

<130> MER-137

<150> PCT/EP2003/008725
<151> 2003-08-07

<150> EP02017914.9
<151> 2002-08-09

<160> 61

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 166
<212> PRT
<213> Homo sapiens

<400> 1

```
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1               5                  10                  15
Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
            20                  25                  30
Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
        35                  40                  45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
    50                  55                  60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65                  70                  75                  80
Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
                85                  90                  95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
            100                 105                 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
        115                 120                 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
    130                 135                 140
Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145                 150                 155                 160
Cys Arg Thr Gly Asp Arg
                165
```

<210> 2

<211> 33
<212> PRT
<213> Homo sapiens

<400> 2
Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu Ala Glu Asn Ile
 1   5   10   15
Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu Asn Ile Thr Val
            20   25   30
Pro

<210> 3
<211> 33
<212> PRT
<213> Homo sapiens

<400> 3
Arg Gly Gln Ala Leu Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu
 1   5   10   15
Gln Leu His Val Asp Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr
            20   25   30
Leu

<210> 4
<211> 33
<212> PRT
<213> Homo sapiens

<400> 4
Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser
 1   5   10   15
Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg
            20   25   30
Thr

<210> 5
<211> 21
<212> PRT
<213> Homo sapiens

<400> 5
Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser
 1   5   10   15
Leu Asn Glu Asn Ile
            20

<210> 6
<211> 21
<212> PRT
<213> Homo sapiens

<400> 6
Arg Gly Gln Ala Leu Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu
 1   5   10   15
Gln Leu His Val Asp
            20

<210> 7
<211> 21
<212> PRT
<213> Homo sapiens

<400> 7
Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu Arg Gly Lys
 1   5   10   15
Leu Lys Leu Tyr Thr
            20

<210> 8
<211> 12
<212> PRT
<213> Homo sapiens

<400> 8
Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala
 1   5   10

<210> 9
<211> 15
<212> PRT
<213> Homo sapiens

<400> 9
Lys Val Val Asp Gln Ile Lys Lys Ile Ser Lys Pro Val Gln His
 1   5   10   15

<210> 10
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 10

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr
1 5 10 15

<210> 11
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 11
Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu
1 5 10 15

<210> 12
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 12
Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
1 5 10 15

<210> 13
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 13
Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu Ala Glu Asn
1 5 10 15

<210> 14
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 14
Glu Arg Tyr Leu Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr

1 5 10 15

<210> 15
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 15
Leu Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala
1 5 10 15

<210> 16
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 16
Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys
1 5 10 15

<210> 17
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 17
Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn
1 5 10 15

<210> 18
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 18
Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu Asn Ile
1 5 10 15

<210> 19
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 19
Gly Cys Ala Glu His Cys Ser Leu Asn Glu Asn Ile Thr Val Pro
1 5 10 15

<210> 20
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 20
Glu His Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys
1 5 10 15

<210> 21
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 21
Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
1 5 10 15

<210> 22
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 22
Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp
1 5 10 15

<210> 23
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 23
Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg Met
1 5 10 15

<210> 24
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 24
Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg Met Glu Val Gly
1 5 10 15

<210> 25
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 25
Val Asn Phe Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala
1 5 10 15

<210> 26
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 26
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val
1 5 10 15

<210> 27
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 27
Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly
 1   5   10   15

<210> 28
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 28
Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
 1   5   10   15

<210> 29
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 29
Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu Leu Ser Glu
 1   5   10   15

<210> 30
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 30
Val Glu Val Trp Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu
 1   5   10   15

<210> 31

<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 31
Trp Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln
 1   5   10   15

<210> 32
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 32
Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu
 1   5   10   15

<210> 33
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 33
Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser
 1   5   10   15

<210> 34
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 34
Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser Gln Pro
 1   5   10   15

<210> 35
<211> 15

<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 35
Arg Gly Gln Ala Leu Leu Val Asn Ser Ser Gln Pro Trp Glu Pro
 1   5   10   15

<210> 36
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 36
Ala Leu Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu
 1   5   10   15

<210> 37
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 37
Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
 1   5   10   15

<210> 38
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 38
Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val
 1   5   10   15

<210> 39
<211> 15
<212> PRT

<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 39
Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly Leu
 1   5   10   15

<210> 40
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 40
Leu Gln Leu His Val Asp Lys Ala Val Ser Gly Leu Arg Ser Leu
 1   5   10   15

<210> 41
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 41
His Val Asp Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu
 1   5   10   15

<210> 42
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 42
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala
 1   5   10   15

<210> 43
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 43
Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala
1 5 10 15

<210> 44
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 44
Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu
1 5 10 15

<210> 45
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 45
Thr Thr Leu Leu Arg Ala Leu Gly Ala Gln Lys Glu Ala Ile Ser
1 5 10 15

<210> 46
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 46
Leu Arg Ala Leu Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp
1 5 10 15

<210> 47
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 47
Leu Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser
1 5 10 15

<210> 48
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 48
Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro
1 5 10 15

<210> 49
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 49
Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr
1 5 10 15

<210> 50
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 50
Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile Thr Ala Asp
1 5 10 15

<210> 51
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Potential epitope sequences

<400> 51
Ala Ser Ala Ala Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg
1 5 10 15

<210> 52
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 52
Ala Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe
1 5 10 15

<210> 53
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 53
Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr
1 5 10 15

<210> 54
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 54
Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe
1 5 10 15

<210> 55
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 55
Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu Arg Gly
1 5 10 15

<210> 56
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 56
Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys
1 5 10 15

<210> 57
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 57
Arg Val Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr
1 5 10 15

<210> 58
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 58
Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
1 5 10 15

<210> 59
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 59
Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr
1 5 10 15

<210> 60
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Potential epitope sequences

<400> 60
Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp Arg
1 5 10 15

<210> 61
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> Modified erythropoietin

<221> VARIANT
<222> 25, 35
<223> Xaa=Ile, Ala, Gly, or Pro
Xaa=Leu, Ala, Asp, Glu, Gly, His, Lys, Asn, Pro,
Gln, Arg, Ser, or Thr

<221> VARIANT
<222> 88, 91
<223> Xaa=Trp, Thr, Ala, or Gly
Xaa=Leu, Ala, Asp, Glu, Gly, His, Lys, Asn, Pro,
Gln, Arg, Ser, or Thr

<221> VARIANT
<222> 93, 95
<223> Xaa=Leu, Ala, Asp, Glu, Gly, His, Lys, Asn, Pro,
Gln, Arg, Ser, or Thr
Xaa=Val, Ala, Asp, Glu, Gly, His, Lys, Asn, Pro,
Gln, Arg, Ser, or Thr

<221> VARIANT
<222> 141, 142, 144, 145
<223> Xaa=Ile or Thr
Xaa=Phe, Ala, Gly, or Pro
Xaa=Val or Thr
Xaa=Tyr, Ala, Gly, or Pro

<221> VARIANT

<222> 148, 149
<223> Xaa=Phe, Ala, Gly, or Pro
Xaa=Leu, Ala, Asp, Glu, Gly, His, Lys, Asn, Pro,
Gln, Arg, Ser, or Thr

<221> VARIANT
<222> (153)...(153)
<223> Xaa=Leu, Ala, Asp, Glu, Gly, His, Lys, Asn, Pro,
Gln, Arg, Ser, or Thr

<400> 61

```
Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
 1               5                  10                  15
Leu Glu Ala Lys Glu Ala Glu Asn Xaa Thr Thr Gly Cys Ala Glu His
            20                  25                  30
Cys Ser Xaa Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
        35                  40                  45
Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
    50                  55                  60
Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65                  70                  75                  80
Leu Val Asn Ser Ser Gln Pro Xaa Glu Pro Xaa Gln Xaa His Xaa Asp
                85                  90                  95
Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
            100                 105                 110
Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
        115                 120                 125
Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Xaa Xaa Arg Xaa
    130                 135                 140
Xaa Ser Asn Xaa Xaa Arg Gly Lys Xaa Lys Leu Tyr Thr Gly Glu Ala
145                 150                 155                 160
Cys Arg Thr Gly Asp Arg
                165
```